

Claims

What is claimed is:

1. A bone plate comprising:
an upper surface;
a bone contacting surface; and
at least one hole extending through the upper surface and the bone contacting surface that may interchangeably receive a locking screw and a compression screw, wherein each hole includes a thread that makes a complete revolution around the hole.
2. The bone plate of claim 1, wherein each hole further comprises:
a top portion extending from the upper surface; and
a bottom portion extending from the top portion to the bone contacting surface, wherein the bottom portion is threaded.
3. The bone plate of claim 2, wherein the top portion extends from the upper surface at a first angle relative to the plane of the upper surface.
4. The bone plate of claim 3, wherein the first angle is about fifty-two degrees.

5. The bone plate of claim 2, wherein the top portion includes a ramp extending from the upper surface at a first angle relative to the plane of the upper surface and a concave recessed portion that is generally spherical.

6. The bone plate of claim 5, wherein the first angle is about fifty-two degrees.

7. The bone plate of claim 2, wherein the bottom portion is generally cylindrical.

8. The bone plate of claim 2, wherein the bottom portion is tapered with an included angle of less than about thirty degrees.

9. The bone plate of claim 8, wherein the included angle is about twenty degrees.

10. The bone plate of claim 2, wherein threads of each hole are configured to receive threads of a head of a locking screw.

11. The bone plate of claim 1, wherein each hole is configured to engage a head of a compression screw and provide compression of fractured bone fragments.

12. The bone plate of claim 11, wherein each hole is configured to engage the head of the compression screw such that fine adjustment of a fracture of up to two millimeters in more than one direction is possible.

13. The bone plate of claim 1, wherein each hole is configured to threadably engage a head of a locking screw and fix the locking screw with respect to the bone plate.

14. A bone plate comprising:
an upper surface;
a bone contacting surface;
at least one hole extending through the upper surface and the bone contacting surface that may interchangeably receive a locking screw and a compression screw, wherein each hole comprises:

a top portion extending from the upper surface; and
a bottom portion extending from the top portion to the bone contacting surface, wherein the bottom portion is threaded to receive threads of a head of a locking screw and the bottom portion includes at least one thread that makes a complete revolution around the hole.

15. The bone plate of claim 14, wherein the top portion extends from the upper surface at a first angle relative to the plane of the upper surface and the bottom portion is tapered with an included angle of less than about thirty degrees.

16. The bone plate of claim 15, wherein the first angle is about fifty-two degrees and the included angle is about twenty degrees.

17. The bone plate of claim 14, wherein the top portion includes a ramp extending from the upper surface at a first angle relative to the plane of the upper surface and a concave recessed portion that is generally spherical and the bottom portion is generally cylindrical.

18. A bone plate assembly comprising:

a bone plate including:

an upper surface;

a bone contacting surface; and

at least one hole extending through the upper surface and the bone contacting surface that may interchangeably receive a locking screw and a compression screw, wherein each hole includes a thread that makes a complete revolution around the hole;

at least one locking screw; and

at least one compression screw.

19. The bone plate assembly of claim 18, wherein the hole is configured to engage a head of the compression screw and provide compression of fractured bone fragments.

20. The bone plate assembly of claim 18, wherein the hole is configured to engage a head of the compression screw such that fine adjustment of a fracture of up to two millimeters in more than one direction is possible.

21. The bone plate assembly of claim 18, wherein the hole is configured to threadably engage a head of a locking screw and fix the locking screw with respect to the bone plate.

22. The bone plate assembly of claim 18, wherein a head of the locking screw includes threads that engage threads in the hole.

23. The bone plate assembly of claim 22, wherein the head of the locking screw and the hole are tapered.

24. The bone plate assembly of claim 23, wherein the head of the locking screw and at least a portion of the hole are tapered at an included angle of less than about thirty degrees.

25. The bone plate assembly of claim 18, wherein the locking screw includes a head with triple lead threads and a single lead threaded shaft such that all threads of the locking screw are of a substantially equivalent pitch.

26. The bone plate assembly of claim 25, wherein the lead is not continuous between the threads of the head and the threads of the shaft of the locking screw.

27. The bone plate assembly of claim 18, wherein the hole further comprises:

a top portion extending from the upper surface; and
a bottom portion extending from the top portion to the bone contacting surface,
wherein the bottom portion is tapered and threaded.

28. The bone plate assembly of claim 27, wherein the top portion extends from the upper surface at a first angle relative to the plane of the upper surface.

29. A method of reducing a fracture of a bone, the method comprising:
coupling a bone plate to the bone with a screw inserted through the bone plate and into engagement with the bone on a first side of the fracture;
inserting a compression screw through a hole in the bone plate and into engagement with the bone on an opposite side of the fracture to adjust the position of the bone and surrounding tissue, wherein the bone plate comprises an upper surface, a bone contacting surface, and at least one hole extending through the upper surface and the bone contacting surface that may interchangeably receive a locking screw and a compression screw, wherein each hole includes a thread that makes a complete revolution around the hole;
removing the compression screw from the hole and engagement with the bone;
and
inserting a locking screw into the hole and into engagement with the bone to fix the position of the bone plate, wherein threads of the hole completely surround threads of a head of the locking screw.

30. The method of claim 30, wherein the position of the bone and surrounding tissue may be adjusted by insertion of the compression screw up to two millimeters in more than one direction.